OeAW - Discovering the future

As a central non-university institution for science and research, the **Austrian Academy of Sciences - OeAW** has the task of "**promoting science in every respect**". Founded in 1847 as a learned society, it now has over 760 members and around 1,800 employees dedicated to innovative basic research, interdisciplinary knowledge exchange and the dissemination of new insights. The OeAW initiates and maintains partnerships worldwide and represents Austria in international scientific organizations; it cooperates with numerous institutions in the scientific field in order to actively **shape the research landscape**.

Praedoc (Diss) (f/m/x) for Physics Analysis with the CMS experiment

Job ID: MBI134DOC225

The Marietta Blau Institute of Particle Physics (MBI, formerly HEPHY) of the Austrian Academy of Sciences, Austria's leading non-university institution for science and research, is offering a position as

Praedoc (Diss) (f/m/x) for Physics Analysis with the CMS experiment

(30 hours per week)

The MBI performs a rich experimental particle physics program and is participating in accelerator- and non-accelerator-based experiments. The institute has a major involvement in the CMS experiment at CERN and in the Belle II experiment at KEK. An experimental group works on direct Dark Matter detection using the CRESST experiment at LNGS. A theory group completes the research profile of the institute.

The MBI is one of the founding members of the CMS Collaboration. We have been strongly involved in the design, construction and operation of two of the major components of the experiment: the trigger system and the tracking detector. Our experience in building silicon detectors, the construction of FPGA based hardware and development of the appropriate firmware allow us to play a leading role within the collaboration. MBI is contributing to the high-luminosity upgrade plans for two major components of CMS: the silicon tracker and the high granularity calorimeter.

MBI has contributed to CMS physics results since the beginning of LHC operation. One of our priorities is the measurement of properties of the top quark, where we develop novel techniques for unbinned data analyses. We are also working on direct searches for signals of a dark sector, searches using displaced leptons, and on measurements of Higgs boson cross sections. Several members of the institute have been entrusted with positions in the CMS physics management.

Your Tasks

- strengthening of our analysis activities with the CMS experiment, in particular, taking a key role in the area of physics of the top quark
- data analysis, including the improvement of existing and the development of novel analysis strategies with novel machine-learning techniques and unbinned methodology
- interpretation of results in the context of SM effective field theory
- contributions to maintenance and development of the reconstruction and the calibration of physics objects

Requirements

- an excellent research record and experience in performing analyses in a large international collaboration
- interest in part-time contributions to detector development is welcome but not a strict requirement
- good communication skills
- ability to work well in a team environment

Our Offer

- interesting and diversified activities in a motivated team of physicists who cover a wide range of expertise from detector design and construction to theoretical physics
- being member of a large international collaboration, including participation in working meetings and conferences and interactions with other CMS teams
- a 75% employment, with an annual gross salary of € 39.208,79 according to the salary scheme of the Austrian Science Fund (FWF)
- The position will be located in Vienna and opened for a period of three years

APPLY NOW

The Austrian Academy of Sciences (OeAW) pursues a non-discriminatory employment policy and values equal opportunities, as well as diversity. Individuals from underrepresented groups are particularly encouraged to apply.

Please submit your application including a CV including a list of relevant publications, a letter of motivation ***no later than Dec 10th, 2025***

Two recommendation letters should be sent separately to mbi-office@oeaw.ac.at

Contact

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